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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/196,574	11/20/1998	KIRAN CHALLAPALI	PHA-23.540	9299

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS
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EXAMINER	
LEE, RICHARD J	
ART UNIT	**PAPER NUMBER**
2613	29

DATE MAILED: 05/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No. 09/196,574	Applicant(s) CHALLAPALI ET AL.	
	Examiner Richard Lee	Art Unit 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stenger of record (DE 3608489A1) in view of Katata et al of record (5,815,601).

Stenger discloses a method of improving image segmentation of a video telephone scene as shown in Figures 3 and 4, and substantially the same apparatus for processing a stereo pair of images, comprising substantially the same a memory which stores process steps (i.e., as provided to carry out functions within Figure 4), and a processor which executes the process steps stored in the memory so as to extract foreground information from the stereo pair of images, to calculate the difference in location of like pixels in each image (see page 4, lines 4-10 of translated article), if the difference in location is above a set threshold the pixel information is identified as foreground pixel information, if below the set threshold the pixel information is determined to be background pixel information (see page 4, lines 4-10 of translated article).

Stenger does not particularly disclose, though, a processor which executes the process steps stored in the memory so as to extract foreground information from the stereo pair of images in the form of foreground 8 x 8 DCT blocks of coefficients, to determine whether each 8 x 8 DCT block contains a particular amount of foreground information, to encode the foreground 8 x 8 DCT blocks of coefficients at a first high level of quantization and to encode background 8 x 9 DCT blocks of coefficients at a second lower level of quantization, and to encode those 8 x 8 DCT blocks having at least the particular amount of foreground pixel information at a first

higher level of quantization and those 8 x 8 DCT blocks having less than the particular amount of foreground information at a second lower level of quantization as claimed in claims 15 and 16. However, Katata et al discloses an image encoder as shown in Figure 1 and teaches the conventional use of a DCT block classifier (i.e., within 106 of Figure 1, and see column 5, lines 1-4) coupled to a foreground extractor (i.e., 101, 102 of Figure 1 and see column 4, line 45 to column 5, line 4) for determining which DCT blocks of at least one of the images contain a threshold amount of foreground information; an encoder (i.e, within 106 of Figure 1, and see column 5, lines 1-4) coupled to the DCT block classifier which encodes the DCT blocks having the threshold amount of foreground information with a first higher level of quantization and which encodes the DCT blocks having less than the threshold amount of foreground information as background information (i.e., background information is being provided by the threshold 15 of Figure 4 of Stenger et al) at a second lower quantization level (see column 1, lines 12-25, columns 7-8) relative to the first high level of quantization (i.e., different quantization step sizes pertaining to a selected area of interest are assigned, with high and low quantization level selections, see column 7, line 49 to column 8, line 24, column 9, line 38 to column 10, line 13), the encoder encodes the foreground 8 x 8 DCT blocks of coefficients at a first high level of quantization and which encodes background 8 x 8 DCT blocks of coefficients at a second lower level of quantization (see column 1, lines 12-25, columns 7-8). Therefore, it would have been obvious to one of ordinary skill in the art, having the Stenger and Katata et al references in front of him/her and the general knowledge of stereo image processings within video phone environments, would have had no difficulty in providing a DCT block classifier and an encoder for providing different quantization level processings for foreground and background image data,

as taught by Katata et al for the stereo image videophone system within Stenger for the same well known image compressions purposes as claimed.

3. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stenger of record (DE 3608489A1) and Katata et al of record (5,815,601) as applied to claims 15 and 16 in the above paragraph (2); and further in view of Monro et al of record (6,078,619) and Chun et el of record (6,038,258).

The combination of Stenger and Katata et al discloses substantially the same image processing device and system, method of encoding a stereo pair of images, computer executable process steps to process image data from a stereo pair of images, and apparatus for processing a stereo pair of images as above, further comprising substantially the same input which receives a stereo pair of images (see 10 of Figure 3 and 11, 12 of Figure 4 of Stenger); a foreground extractor (13-15 of Figure 4 and see page 4, lines 4-10 of translated article of Stenger) coupled to the input which compares location of like pixel information in each image to determine which pixel information is foreground pixel information and which pixel information is background pixel information, wherein the foreground extractor computes the difference in location of like pixels in each image and selects the foreground pixels as those pixels whose difference in location falls above a threshold distance; wherein the stereo pair of images are received from a stereo pair of cameras spaced closely from one another in a video conference system (see Figure 3 of Stenger); the extracting includes identifying the location of like pixels in each of the stereo pair of images, calculating the difference between the locations of like pixels, and determining for each set of like pixels whether the difference between locations falls above a threshold difference, and if so identifying those pixels as foreground information (see page 4, lines 4-10 of

translated article of Stenger); wherein the encoding step encodes entire 8 x 8 block of DCT coefficients at the first higher quantization level if the 8 x 8 block of DCT coefficients contains the predetermined amount of foreground pixel information (see column 1, lines 12-58, columns 7-8 of Katata et al); wherein the foreground pixel information is defined in terms of entire 8 x 8 blocks of DCT coefficients, wherein the foreground pixel information is defined in terms of entire 8 x 8 blocks of DCT coefficients, wherein the encoding step encodes an entire 8 x 8 block of DCT coefficients as foreground information if at least a predetermined number of foreground pixels are within the 8 x 8 block, otherwise the entire 8 x 8 block of DCT coefficients is encoded as background information (see column 1, lines 12-58, columns 7-8); and the encoder providing bit stream information (i.e., the different quantization levels assigned for the specific areas are being transmitted to the decoder as shown in Figures 2 and 18 of Katata et al) for decoding of both the high level of quantization and lower level of quantization that are encoded.

The combination of Stenger and Katata et al does not particularly disclose, though, the followings:

(a) wherein at least a majority of a bandwidth is encoded at the first high quantization level and the first high/higher level of quantization as claimed in claims 1, 4, 7, 8, 11, and 14; and

(b) wherein a contour of a participant whose image is at least part of the stereo pair of images is not represented by a precise number of pixels but rather the contour is defined by a plurality of 8 X 8 DCT blocks as claimed in claims 1, 4, 7, 8, 11, and 14.

Regarding (a), it is noted that Katata et al does teach the particular finer quantization for areas of interest, such as the facial region (i.e., foreground data, see column 1, lines 12-25,

column 4, lines 45-61, column 5, lines 5-20, column 7, line 26 to column 8, line 23, column 9, line 36 to column 10, line 13, Figures 1, 13, 14b, 17). It is well recognized in the art that finer quantization requires more bandwidth. And though Katata is silent as to where a majority of the bandwidth is encoded, it is nevertheless considered obvious that a majority of a bandwidth is encoded for the foreground data (i.e., facial region) since a finer quantization level is required. In any event, Monro et al discloses an object oriented video system and teaches the conventional use of a bit rate manager 42 of Figure 1 for allocation of a majority of bandwidth for foreground information over background information (see column 2, lines 55-63, column 5, lines 30-37, column 6, lines 7-17). Therefore, it would have been obvious to one of ordinary skill in the art, having the Stenger, Katata et al, and Monro et al references in front of him/her and the general knowledge of foreground/background encoding of video data, would have had no difficulty in using the particular majority of bandwidth allocation for foreground data as taught by Monro et al to provide a majority of a bandwidth to be encoded at the first high quantization level and the first high/higher level of quantization for the foreground data of Katata et al and Stenger for the same well known image quality control and bandwidth allocation control purposes as claimed.

Regarding (b), it is noted that though silent in Katata et al, the contour DCT block coding as claimed is nevertheless considered obviously provided by the particular position, shape and/or facial image data coding within the area position and shape encoding section 102, parameter adjusting section 104 and encoding section 106 of Figure 1 of Katata et al (see column 4, line 45 to column 5, line 20 of Katata et al). In any event, Chun et al discloses an encoding system as shown in Figure 1 and teaches the conventional use of encoder 20 for encoding contour data with DCT transformations (see column 4, lines 38-44). And since Katata et al teaches 8 X 8 DCT

block transformations, such specific block transformations may certainly be provided within Chun et al to thereby render obvious the claimed limitations. Therefore, it would have been obvious to one of ordinary skill in the art, having the Stenger, Katata et al, Woodfill et al, and Chun et al references in front of him/her and the general knowledge of contour codings, would have had no difficulty in providing the contour defined 8 X 8 DCT block coding as taught by the combination of Katata et al and Chun et al for the stereo image videophone system of Stenger for the same well known contour image compression purposes as claimed.

4. Regarding the applicants' arguments at pages 10-12 concerning in general that "… Applicants respectfully disagree that the disclosure that in Katata (col. 4, line 45 to col. 5, line 20), in combination with the other references discloses or suggests that at least part of the stereo pair of images is not represented by a precise number of pixels. In fact, a person of ordinary skill in the art, would glean from the combination of references that in fact the contour is made of a precise number of pixels. As each block in Katata comprises a plurality of pixels, there is nothing gleaned from the combination of reference regarding the precision of the representation of the contour … Chun teaches that the pixels within a block can have different values, meaning that when one takes the contour of an object, the precise number of pixels are used. Thus, the combination of the cited references still fails to disclose, suggest, or motivate the artisan such that any of the instant claims would have been obvious at the time of invention …", the Examiner respectfully disagrees. It is to be noted that the contour data as disclosed in the present invention and as disclosed within the applied references are nevertheless derived from pixel data. The particular feature of not representing the contour of a participant by a precise number of pixels but rather the contour is defined by 8x8 DCT blocks as claimed is considered obviated by

the encoder 20 of Chun et al for encoding contour data with 8 x 8 DCT block transformations (i.e., as provided in the combination of Chun et al and Katata et al). In other words, contour data is represented and defined by a plurality of 8 x 8 DCT blocks (i.e., as provided by Katata et at), at the output of differential data encoder 20 of Chun et al, and not a precise number of pixels as claimed. As such, it is submitted again that the contour defined 8 x 8 DCT block coding as taught by the combination of Katata et al and Chun et al may certainly be provided for the stereo image videophone system of Stenger, thereby rendering obvious the claimed invention.

5. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314, (for formal communications intended for entry)

(for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Lee whose telephone number is (703) 308-6612. The Examiner can normally be reached on Monday to Friday from 8:00 a.m. to 5:30 p.m, with alternate Fridays off.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group customer service whose telephone number is (703) 306-0377.

RICHARD LEE
PRIMARY EXAMINER

Richard Lee/rl

4/29/04